IN THE CLAIMS

This listing of the claim will replace all prior versions and listings of claim in the present application.

Listing of Claims

1. (currently amended) A storage ~~device ,~~system, for use in a computer system having a plurality of ~~superior~~ host devices and a plurality of said storage ~~device~~ systems, for receiving write-in data from at least one of the ~~superior~~ host devices, said storage system comprising:

a physical storage device~~, responsive to~~ having a logical volume ~~which~~ for storing data,

wherein said storage system is controlled so that identical data is saved across ~~the~~ a plurality of storage ~~device~~ systems~~, for storing data on the logical volume~~;

a device for saving ~~the~~ a time of reception on which write-in data was received from a ~~superior~~ host device in a data consistency holding table;

wherein said data consistency holding table includes a plurality of entries each indicating a corresponding relation between a reception time of write-in data, an identifier of a host which sent the write-in data to said storage system, an address at which the write-in data is to be stored, an identifier of a storage system in which the write-in data is stored and an address in a temporary storage device within which the write-in data is temporarily stored;

a communication interface device for conducting bi-directional transmission of write-in data including transmitting write-in data addressed to the logical volume and

a corresponding reception time to another storage ~~device~~ system and ~~for~~ receiving write-in data addressed to the logical volume and the corresponding reception time from the another storage ~~device~~ system; and

a data consistency holding control device for effecting control, based on said data consistency holding table, to write write-in data which was received from the ~~superior~~ host device and write-in data which was received through the communication interface device into the physical storage device after such write-in data has been made to wait in ~~a~~ the temporary storage device for more than a predetermined time as measured from the reception time corresponding to the write-in data to the logical volume, so that, when write-in data which was received from the ~~superior~~ host device and write-in data which was received through the communication interface device are written in an overlapped manner into the same storage location of the physical storage device, they are written in ~~the~~ an order ~~of the~~ as indicated by their respective reception ~~time thereof~~ times.

2. (currently amended) The storage ~~device~~ system as set forth Claim 1, ~~wherein the storage device system~~ further comprising: ~~has a table in which the reception times corresponding to each write in data which is waiting in the temporary storage device are arranged in the order from an older one, and~~

a device for searching write-in data to determine for which data said more than said predetermined time has passed as measured from the reception time~~.~~,

wherein said entries of said data consistency holding table are arranged according to said reception times corresponding to each write-in data which is waiting in the temporary storage device in an order from an older one.

3. (currently amended) The storage ~~device~~ system[-] as set forth in Claim 1, ~~wherein the storage device system~~ further comprising:~~has~~

a bit map table for setting a bit value to indicate whether or not each block of the write-in data exists in the temporary storage device~~,~~; and

a device for judging whether or not new write-in data is written in an overlapped manner into the same storage location as the other write-in data with reference to the bit map table.

4. (currently amended) The storage ~~device~~ system as set forth in Claim 1, ~~wherein the storage device system~~ further comprising:~~has~~

a device for receiving a request for locking a partial region of the logical volume from the superior device and for locking the partial region~~,~~;

a device for transmitting the locking request which was received through the communication interface device to the other storage device system~~,~~;

a device for receiving the locking request through the communication interface device from the other storage device system and for locking a designated partial region~~,~~; and

a device for rejecting a request for write-in of data from the superior device and the other storage device system to the partial region, except for a case in which it is a request from the superior device in which the partial region was locked.

5. (currently amended) A storage ~~device~~ system for use in a computer system having a plurality of ~~superior~~ host devices and a plurality of said storage ~~device~~ systems for receiving write-in data from at least one of the ~~superior~~ host devices, comprising:

a physical storage device, ~~responsive to~~having a logical volume ~~which~~ for storing data,

wherein said storage system is controlled so that identical data is saved across ~~the~~ a plurality of storage ~~device~~ systems~~, for storing data on the logical volume~~;

a device for saving ~~the~~ a time of reception on which write-in data was received from a ~~superior~~ host device in a data consistency holding table;

wherein said data consistency holding table includes a plurality of entries each indicating a corresponding relation between a reception time of write-in data, an identifier of a host which sent the write-in data to said storage system, an address at which the write-in data is to be stored, an identifier of data storage system in which the write-in data is stored and an address in a temporary storage device within which the write-in data is temporarily stored;

a communication interface device for conducting bi-directional transmission of write-in data including transmitting write-in data addressed to the logical volume and

a corresponding reception time to another storage device system and ~~for~~ receiving write-in data addressed to the logical volume and corresponding reception time from the storage ~~device~~ system;

wherein ~~a table in which~~ the reception times in said data consistency holding table corresponding to each of write-in data from the ~~superior~~ host device and write-in data from the other storage ~~device~~ system are arranged in an order from an older one to a newest one; and

a data consistency holding control device for effecting control, ~~with reference to the~~ based on said data consistency holding table to write write-in data to the logical volume for which more than a predetermined time has passed as measured from the reception time into the physical storage device in the order of the older reception time.

6. (currently amended) The storage ~~device~~ system as set forth in Claim 5, ~~wherein the storage device system~~ further comprising: ~~has~~

a device for receiving a request for locking a partial region of the logical volume from the superior device and for locking the partial region~~,~~;

a device for transmitting the locking request which was received through the communication interface device to the other storage device system~~,~~;

a device for receiving the locking request through the communication interface device from the other storage device system and for locking a designated partial region~~,~~; and

a device for rejecting a request for write-in of data from the superior device and the other storage device system to the partial region, except for a case in which it is a request from the superior device in which the partial region was locked.